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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/026,227	12/21/2001	Lee Begeja	2001-0510	4370
26652	7590	08/19/2005	EXAMINER	
AT&T CORP. P.O. BOX 4110 MIDDLETOWN, NJ 07748			DYKE, KERRI M	
			ART UNIT	PAPER NUMBER
			2667	

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Please find below and/or attached an Office communication concerning this application or proceeding.

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<b>Office Action Summary</b>	<b>Application No.</b> 10/026,227	<b>Applicant(s)</b> BEGEJA, LEE	
	<b>Examiner</b> Kerri M. Dyke	<b>Art Unit</b> 2667	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 21 December 2001.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1,2,4-10 and 15-20 is/are rejected.
- 7) ☒ Claim(s) 3 and 11-14 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 21 December 2001 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## **DETAILED ACTION**

### ***Drawings***

1. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(4) because reference characters "270" and "280" have both been used to designate "convergence point" in Figure 2. Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.
2. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they include the following reference character(s) not mentioned in the description: Figure 6, elements 610 and 640. Corrected drawing sheets in compliance with 37 CFR 1.121(d), or amendment to the specification to add the reference character(s) in the description in compliance with 37 CFR 1.121(b) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not

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accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

***Claim Objections***

3. Claim 14 is objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicant is required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form. Claim 14 states that convergence is performed when the plurality of unicasts are at substantially the same point within the unicast, but parent claim 8 stated that the unicasts are converged at the same point within each unicast. The limitation “substantially the same point” is a broader, not narrower, claim than “same point”.

***Claim Rejections - 35 USC § 112***

4. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

5. Claim 5 is rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. Claim 5 includes references to a movie provider, movie theater, and an encryption key, but there is no disclosure for any of these features within the specification.

***Claim Rejections - 35 USC § 102***

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

7. Claims 1, 6, 7, and 17-19 are rejected under 35 U.S.C. 102(b) as being anticipated by Li et al. published as US patent 6,543,053 and IEEE article published in 1997. The following rejections refer to the US patent, but the IEEE article discloses the same information.

In regards to claim 1, Li et al. discloses a method comprising: receiving a plurality of requests for unicast transmission streams; providing the plurality of unicast transmission streams (column 4 lines 65-67); synchronizing the plurality of unicast transmission streams (column 5 lines 6-8); and replacing the synchronized plurality of unicast transmission streams with a multicast stream (column 5 lines 3-4).

In regards to claim 6, Li et al. discloses the method of claim 1, wherein the plurality of unicast transmission streams contain a single pre-recorded event (column 6 lines 7-9). Li et al. disclose an invention for more efficient video-on-demand delivery to multiple users. It is inherent that each set of end users must be watching the same video in order for their invention to function properly.

In regards to claim 7, Li et al. discloses the method of claim 1, wherein the plurality of unicast transmission streams are started at different times (column 8 lines 49-52). Because each batch is created on demand it is inherent that they would start at different times. It is disclosed in column 8 line 47 that there is a maximum waiting time for more users to join after the initial

request but before transmission occurs. If no other users join the transmission is inherently unicast. The plurality of unicast transmissions can also be created by user interaction as described in column 8 lines 1-10. Any time a user interaction is initiated a unicast stream is created.

In regards to claim 17, Li et al. discloses a method comprising: delivering a plurality of point-to-point communication to a plurality of users; converting the plurality of point-to-point communications into a point-to-multipoint communication; and delivering the point-to-multipoint communication to the plurality of users. In column 8 lines 1-5 it is disclosed that a plurality of unicast transmissions to a plurality of users is possible. In column 8 lines 5-10 it is disclosed that the plurality of unicast transmissions are converted to a multicast transmission and delivered to a plurality of users. The fact that not all of the unicasts transmissions will necessarily be converted to the same multicast transmission is irrelevant.

In regards to claim 18, Li et al. disclose the method of claim 17, wherein the point-to-point communications are streaming media (column 4 line 37). A video stream is a type of streaming media.

In regards to claim 19, Li et al. disclose the method of claim 17, wherein converting the plurality of point-to-point communications into a point-to-multipoint communication comprises applying a timing algorithm to synchronize the plurality of point-to-point communications. Figure 6 illustrates the timing used to select the appropriate multicast stream for the synchronization of each unicast stream. The timing algorithm is explained in column 9 lines 32-33.

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8. Claims 1 and 2 are rejected under 35 U.S.C. 102(b) as being anticipated by Poon et al. (IEEE article entitled “Design and Analysis of Multicast Delivery to Provide VCR Functionality in Video-on-Demand Systems”).

In regards to claim 1, Poon et al. discloses a method comprising receiving a plurality of requests for unicast transmission streams; providing the plurality of unicast transmission streams; synchronizing the plurality of unicast transmission streams; and replacing the synchronized plurality of unicast transmission streams with a multicast stream. Poon et al. disclose a video-on-demand system with user interaction (similar to the invention of Li et al.). These user interactions result in a plurality of unicast transmissions which are synchronized and merged to a multicast stream as described in section 4, page 135.

In regards to claim 2, Poon et al. discloses the method of claim 1, wherein synchronizing the plurality of unicast transmission streams is performed by speeding up one or more of the unicast transmission streams (page 135, section 4, last sentence of first paragraph).

***Claim Rejections - 35 USC § 103***

9. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

10. Claims 8-9 and 15-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Li et al. (US 6,543,053).

In regards to claim 8, Li et al. discloses a method comprising synchronizing a plurality of separate unicasts; and converging the plurality of synchronized unicasts into a single multicast,

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wherein the unicasts have been converged at the same point within the unicast. In column 8 lines 1-10 a method for converging a unicast into an ongoing multicast is disclosed. It would have been obvious to one of ordinary skill in the art that it would be possible for two or more users to initiate user interactions such that the separate unicasts would end and require merging at the same point. For example one user might initiate a jump forward from frame 2 to frame 5 while another user might initiate a jump from frame 3 to frame 5. It is possible that both users would be synchronized and merged into the same multicast. It is inherent that they would be converged at the same point within the unicasts, because otherwise the movie would be interrupted.

In regards to claim 9, Li et al. discloses the method of claim 8, further comprising delivering the plurality of separate unicasts to a plurality of unicast recipients. Receivers are shown in figures 1a-c and figure 2 as element 120. It is inherent that these receivers are capable of receiving unicast transmissions and are shown accepting unicast transmission in figure 1b.

In regards to claim 10, Li et al. discloses the method of claim 8, further comprising receiving a plurality of requests for the unicast from a plurality of unicast requestors (column 8 lines 1-2). It would have been obvious to one of ordinary skill in the art that there will be more than one requested user interaction or user initiated video-on-demand at any one time.

In regards to claim 15, Li et al. discloses the method of claim 8, wherein converging the plurality of synchronized unicasts into a single multicast comprises: terminating each of the plurality of synchronized unicasts; and replacing each of the terminated plurality of synchronized unicasts with a multicast. In column 8 lines 6 and 7 it is disclosed that the multicast stream replaces the unicast stream when the unicast stream is no longer needed. In column 9 line 67 it is



disclosed that the unicast stream is released or, in other words, the unicast transmission to the selected receiver is terminated and replaced by the multicast stream.

In regards to claim 16, Li et al. discloses the method of claim 8, wherein converging the plurality of synchronized unicasts into a single multicast, wherein the single multicast replaces the plurality of unicasts. In the claim 15 rejection it was disclosed that the multicast transmission replaces a single unicast. It would have been obvious to one of ordinary skill in the art that if multiple users requested unicasts that terminated at the same time at the same point, all the unicasts would be replaced with the same multicast transmission.

11. Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Poon et al. (IEEE article).

In regards to claim 4, Poon et al. disclose the method of claim 1, wherein synchronizing the plurality of unicast transmission streams comprises varying each stream's speed so that the plurality of streams end up at the same transmission point. On page 135, section 4, last sentence of the first paragraph it is disclosed that unicast transmission speed can be varied so the stream converges with a multicast stream. It would have been obvious to one skilled in the art that multiple users may request user interactions such that when the interaction ends and their transmission speed is varied the plurality of unicast transmissions would be merged at the same point.

12. Claim 20 is rejected under 35 U.S.C. 103(a) as being unpatentable over Jones et al. (US 6,512,776) in view of Li et al. (US 6,543,053).

In regards to claim 20, Jones et al. discloses a method for multicasting initially unicast information streams (column 2 lines 15-19), the method comprising: processing a plurality of

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unicast streams (column 2 lines 33-36 and Figure 2), and converting the plurality of converged unicast streams to a multicast stream, wherein the multicast stream replaces the plurality of unicast stream without interruption of the stream content (column 2 lines 33-36 and Figure 2). It does not disclose converging the plurality of unicast streams.

Li et al. discloses in column 8 lines 1-10 a method for synchronizing a unicast transmission for merging into a multicast transmission.

Jones et al. and Li et al. are analogous art because both disclose methods for better utilizing bandwidth by minimizing the use of unicast transmissions in favor of multicast transmissions while still allowing for on-demand service.

It would have been obvious to one of ordinary skill in the art to modify Jones et al.'s method to include synchronization as taught by Li et al.

The motivation for doing so is to increase the efficiency of Jone et al.'s invention. As disclosed Jones et al.'s invention will only combine identical unicast streams into a multicast, which means that end users must have coincidentally began their transmissions in a such a way that the same packets arrive at the router at the same time. By utilizing the synchronization method taught by Li et al., more users can be included in each multicast transmission, thus improving bandwidth usage.

***Allowable Subject Matter***

13. Claims 3 and 11-13 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.


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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kerri M. Dyke whose telephone number is (571) 272-0542. The examiner can normally be reached on Monday through Friday, 8:10 am - 4:15 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Chi Pham can be reached on (571) 272-3179. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

KMD

  
CHI PHAM  
SUPERVISORY PATENT EXAMINER  
TECHNOLOGY CENTER 2667 8/18/05